

## Questions and Answers Regarding DARPA-BAA-09-33

Updated 16 September 2009

Please submit any further questions to [DARPA-BAA-09-33@darpa.mil](mailto:DARPA-BAA-09-33@darpa.mil)

### Questions submitted through 14 August 2009:

**Q1.** Even with the work conducted under HQP, creating coupled CFD-CSD codes to generate rotor performance predictions with confidence will be a substantial task. To what extent is the work under Phase 1 geared towards tool development?

**A1.** There is no expectation that the Proposer will develop tools under this BAA. Multiple high-fidelity, physics-based coupled CFD and CSD simulations exist, and have demonstrated impressive correlation. The use of high fidelity tools described in the BAA is for the purpose of substantiating the performance and attributes of the Proposer's MAR demonstrator rotor via correlation with test data at the end of Phase II. Use of these tools or similar in Phase I is anticipated to support design and substantiation of the MAR demonstration system, and demonstrate the capability to appropriately apply the tools toward successful correlation in Phase II. Use of specific computational tools generated during the Helicopter Quieting Program are not required, but that level of fidelity is expected to support design and substantiation of the MAR demonstration system, and demonstrate the capability to appropriately apply the tools toward successful correlation in Phase II.

**Q2.** Is the BAA available in Word format?

**A2.** The Microsoft Word version of the BAA has been posted to:

<http://www.darpa.mil/tto/solicit/index.htm>

In the event of any discrepancy, the official version (DARPA-BAA-09-33.pdf) posted on FedBizOpps at the below website takes precedence.

[https://www.fbo.gov/?s=opportunity&mode=form&id=b1aa0c3299c2514d3ae394c14e6e5084&tab=core&\\_cview=0](https://www.fbo.gov/?s=opportunity&mode=form&id=b1aa0c3299c2514d3ae394c14e6e5084&tab=core&_cview=0)

### Questions submitted through 26 August 2009:

**Q3.** Does the draft TMP (submitted with the proposal) require the identification of proposed activities in Phases II & III? Does it require the identification of specific hardware or configuration items? If so, to what level of detail is expected? (Ref: Section C, subpara. 2 Technology Maturation and Demonstration Approach)

**A3.** Refer to forthcoming BAA-09-33 Amendment. In the case of conflict, the requirements of the BAA-09-33 Amendment take precedence.

The initial draft of a Proposer's Technology Maturation Plan (TMP) should provide an initial description of the required risk reduction activities for the candidate (or example) technologies and identify key system integration challenges through Phase III. This includes identifying necessary risk reduction, development, and demonstration activities for specific rotor hardware and control system hardware and software. While the focus and greatest level of detail should be on Phase I activities, it is important that the Government understand the overall scope, schedule and ROM cost of risk reduction needed to fully mature the technologies to support the Phase III demonstration. The TMP needs to include (at a minimum) a top level schedule for major component and subsystem level risk reduction activities in Phases II and III and address how they provide adequate risk reduction to enable the planned Phase III demonstration.

**Q4.** There are several references to an IMP and the Phase I execution plans. Is the IMP a separate deliverable? (i.e. distinct and separate from other deliverables such as the TMP) (Ref: Section D, subpara. 1 Kick-Off Meeting)

**A4.** The Phase I “execution plans” include the Phase I Integrated Master Plan (IMP), Integrated Master Schedule (IMS), and Statement of Work (SOW). These documents are expected to be provided/updated as deliverables during the Kick-Off and subsequent reviews, as required.

**Q5.** There is a requirement identified in Section 1, subpara. 6 under the SRR section to identify and define tailoring of the DoD Systems Engineering process requirements used on the program. There are a number DAU guidelines, military standards, and accepted INCOSE standards regarding Systems Engineering that the Proposer invokes for its development programs. Can you identify some specific DoD process documents for reference?

**A5.** The Proposer is responsible for defining the systems engineering process they intend to use. The Proposer is encouraged to use available resources consistent with DoD systems engineering processes including industry best practices to describe the system level requirements and functions necessary to achieve MAR goals.

**Q6.** At SRR, is there a level of expected documentation/format required for the draft interfaces? For instance, are draft interface documents and drawings expected, or would some form of interface requirements matrix defining those draft interfaces be sufficient?

**A6.** The draft interfaces should be defined and quantified for the Phase I System Requirements Review (SRR) using the proposer’s best practices. It is not anticipated that a thorough set of Interface Control Documents (ICD) and engineering drawings will be produced during Phase I; however, it is anticipated that the format of interface definition, initial identification of interfaces, preliminary values (where appropriate) for critical interfaces, and identification of issues or challenges will be provided.

**Q7.** Please confirm that the milestones shown in the schedule shown on page 11 of the BAA are notional and that the contractor can alter the dates within reason and with justification.

**A7.** This is correct: The Phase I schedule shown in Section D is notional and the Proposer can alter dates with justification, with the exception of the timing of Final Phase II and III Program Plans and the overall 16 month period of performance. In addition, the deliverables described in Sections D.1 through D.8 are considered BAA requirements and must be met in order to be considered compliant.

**Q8.** Reference Part One: Overview Information; In accordance with the DARPA eligibility requirements supporting the issuance of Other Transactions to traditional defense contractors, use of OTs would entail “at least one third of the total cost of the prototype project is to be paid out of funds provided by the parties to the transaction other than the federal government”. If a traditional defense contractor proposes a cost sharing scenario that does not amount to 1/3 of the total cost, would DARPA consider in-kind contribution towards the overall total cost of the program as cost sharing?

**A8.** As noted in the “Other Transactions Guide for Prototype Projects”, dated January 2001, cost sharing should generally consist of labor, materials, equipment, and facilities costs (to include allocable indirect costs)(e.g. cash contributions); however, the use of in-kind contributions may be used towards meeting the 1/3 cost sharing for Other Transactions (OT) provided the proposer has substantiated that this contribution represents an equivalent cost delta to the program.

**Q9.** No mention is made for pricing purposes of a start date. With the proposal due 21 September 2009, what date should the contractor assume as the first month of the 16 month program?

**A9.** *Refer to forthcoming BAA-09-33 Amendment. In the case of conflict, the requirements of the BAA-09-33 Amendment take precedence.*

For pricing purposes, the contractor may assume a 1 January 2010 start date.

**Q10.** In the appendix on page 44 of the BAA, for the Table 1, Cost Summary Sheet, can the contractor use its existing automated cost analysis summaries in lieu the Table 1 cost summary as long as the requested data is clearly displayed in its existing format?

**A10.** To streamline evaluation, the Government requests that the Cost Summary Sheet format shown on page 44 of the BAA be provided in the initial page(s) of the Cost Proposal. The proposer may provide additional information in contractor format if desired.

**Q11.** In the appendix on page 45 of the BAA, for the Table 2, Phase X Monthly Summary, the first paragraph on page 45 requests costs by month but the table list quarters. Does DARPA want months with Quarterly roll-ups or just show Quarters?

**A11.** *Refer to forthcoming BAA-09-33 Amendment. In the case of conflict, the requirements of the BAA-09-33 Amendment take precedence.*

The cost proposal should show a summary of all costs by WBS by month. Table 2 is in error: the column titles should be "Month 1", etc.

**Q12.** In the appendix on page 45 of the BAA, for the Table 4 list Hours and Rate data by Fiscal Year. Do the fiscal years shown in the table refer to Government FY or can the proposal be sorted by calendar year?

**A12.** Labor Rate Summaries should be provided in Government Fiscal Years (October 1 – September 31). Additional break-outs by calendar year or proposer fiscal year may be submitted if desired.

**Q13.** Reference Section VIII, Other Information, Paragraph C Reference Missions; The text description of the Army Recon mission (Page 42) says the radius of action is 300nm, the table at the bottom of page 42 states 120nm Vbr and 100 nm Ingress. Which is correct?

**A13.** *Refer to forthcoming BAA-09-33 Amendment. In the case of conflict, the requirements of the BAA-09-33 Amendment take precedence.*

The statement that the radius of action is 300 nm is in error. This bullet can be deleted – the graphic and the table are correct. The Reference "Army Mission" is a 100 nm ingress/egress requirement, while the inbound and outbound cruise segment of 120 nm is a threshold for a current technology rotor/fuselage. The overall radius of the MAR rotor with the current technology fuselage should show the benefit of the MAR program.

**Q14.** Can we propose an alternate sizing mission more closely related to our legacy aircraft capability, for the objective MAR, instead of using one of the BAA provided reference missions?

**A14.** The two BAA provided missions are suggested but not required. Proposers are invited to include analyses of their own reference missions, if desired. If a legacy aircraft is not capable of a mission, the mission should be modified and this change should be clearly identified.

**Q15.** In the mission segment table, the speed given for the Ingress/Egress segments is Vp, defined below the table as "penetration velocity". Since the engine power limit for this segment

is given in the table as 90% MCP, we assume that Vp is not meant to be a high speed. Perhaps the Ingress/Egress segments are meant to be flown NOE, and thus Vp might be on the order of 80 to 100 knots? Is our assumption correct that the value of Vp is left to the Offeror? If not, please provide more direction on Vp.

**A15.** Vp (penetration speed) is the speed where power required equals 90% MCP power available. Vp should be representative of high speed terrain following/terrain avoidance flight, and not classical helicopter Nap-of-the-earth (NOE) flight. For a legacy aircraft, this speed is defined by the current capability. For a new aircraft, this speed is left to the Offeror.

**Q16.** On page 10 of the BAA regarding the Phase I Objectives in paragraph 3 “Benefits of an Objective Mission Adaptive Rotor” one of the tasks is to conduct an assessment of benefits of an operational MAR rotor on an existing military fielded system”. If a contractor proposed a MAR technology that cannot be retrofitted on a legacy aircraft (e.g. its either impractical or there is no fielded system that could accept the technology), what would be the impact in the proposal evaluation and could the proposal be deemed non compliant with the phase 1 objectives?

**A16.** The assessment of benefits of an operational MAR rotor on an existing military fielded system is to provide an indication of the benefit of MAR technology when retrofit to a fielded system, which will fall short of the benefit available on a new aircraft designed around the MAR technology. If MAR technology cannot be applied to a legacy system, the proposal would not be deemed non-compliant; however, this limitation must be clearly described so that it can be assessed during evaluations.

**Q17.** There is a statement in Section 1, subpara. 6 under the SRR section, “The requirements should have direct legacy to the MAR objective system design.” Could you provide clarity to the intent of this statement? Does this refer to the process requirements of the previous statement or the system level requirements referenced as a part of the SRR?

**A17.** The system requirements identified during the Systems Requirements Review (SRR) should have direct traceability to the MAR system level objectives identified in Section G. Although the demonstrator rotor will have differences from the objective rotor, the MAR demonstrator rotor requirements should lead toward demonstration of the key technologies and approach that will clearly enable the MAR objective rotor.

Questions submitted through 31 August 2009:

**Q18.** Is the demonstrator rotor system required to meet the criteria listed under the first bullet on page 16 (i.e. 30%, 40%, 50%, 90%)?

**A18.** No. The metrics cited refer to a new rotorcraft with the MAR objective system relative to a new rotorcraft designed with State-of-the-Art prior to maturation of MAR (Adaptive) technology. The proposed MAR program Phases I-III (design, analysis, tests, etc) is for the purpose of substantiating that the objective MAR rotorcraft can meet these metrics. The performance improvements to be demonstrated in the MAR program are to be identified by the proposer.

**Q19.** “Section IV. WBS, Phase I SOW, IMS, Initial TMP and Phase II/III Program Plans (not included in the page count)”. Does this mean that the “Phase II/III Program Plans” are not included in the page count or that the entire Section IV is not included in the page count?

**A19.** Yes. All of Section IV is exempt from the page count.

**Q20.** Will the cost of specified GFE, such as an aircraft, be counted towards the cost evaluation of the proposal?

**A20.** *Refer to forthcoming BAA-09-33 Amendment. In the case of conflict, the requirements of the BAA-09-33 Amendment take precedence.*

Proposal Cost Realism will be evaluated in accordance with BAA section V.A.4. The cost to the Government for Government Furnished Equipment, Property, Information, and Facilities available for use during the MAR program is included in the determination of the proposal(s) to be the most advantageous to the Government.

*Questions submitted through 16 September 2009:*

**Q21.** Does the fold-out requirement of up to five (5) separate single-sided 11 by 17 inch fold-out pages include the exempted portions (Sections I and IV)?

**A21.** The limit of five fold-outs (pg 23 of the MAR BAA) does not apply to the sections that are not page limited.